

REMARKS

Claims 36-48 remain pending in this application, with Claims 36 and 37 being independent.

Applicants have amended Claims 36 and 37.

Applicants turn now to the substance of the Action.

Section 102 Rejections

Claim 36 continues to stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,207,786 (Ishida) for the reasons given at page 2 of the Action.

Claim 36 continues to stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,906,120 (Davis) for the reasons given at page 2 of the Action.

Applicants traverse the Section 102 rejections.

As the Examiner is aware, the present invention is directed to and claims a thermosetting resin composition for adhering materials with dissimilar coefficients of thermal expansion. The transitional phrase of the claim defining the invention has been changed to "consisting essentially of". Thus, the present invention is defined as a thermosetting resin

composition, which consists essentially of* a) a benzoxazine compound in liquid form at room temperature, b) thermoset compounds including epoxy, cyanate ester, maleimide, acrylate, methacrylate, vinyl ether, styrenic, vinyl ester, propargyl ether, diallylamide, aromatic acetylene, benzocyclobutene, thiolenes, maleate, oxazoline, and itaconate, c) optionally, one or more anti-oxidants, bleed control agents, fillers, diluents, coupling agents, adhesion promoters, flexibilizers, dyes and pigments, and d) a cure initiator.

Two documents have been cited individually against Claim 36. They are addressed in turn below.

As an initial matter, however, Applicants wish to set the stage for the Examiner as regards the law of anticipation.

It is well settled that in order to be an effective anticipatory reference, a single document must disclose each and every recitation of a claim under review. Failing such precise

* In *AFG Industries, Inc. v. Cardinal IG Company, Inc.*, 239 F.3d 1239, 57 USPQ2d 1776 (Fed. Cir. 2001), the Court spoke:

Rather, we think that 'composed of' in this case should be interpreted in the same manner as 'consisting essentially of.' Under this approach, the transition phrase 'composed of' excludes ingredients that would materially affect the basic and novel characteristics of the claimed composition.' *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1574, 224 USPQ 409, 412 (Fed. Cir. 1984). The phrase is open to 'unlisted ingredients that do not materially affect the basic and novel properties of the invention.' *PPG*, 156 F.3d at 1354, 48 USPQ2d at 1354.'

disclosure, rejections under Section 102 are improper. Here, neither Ishida nor Davis possesses such disclosure.

Ishida is directed to and claims a ternary composition comprising: a) from about 10 to about 80 weight percent of a benzoxazine monomer, b) from about 10 to about 80 weight percent of an epoxy reactant, and c) from about 1 to about 80 weight percent of a phenolic resin or phenolic compound, where the weight percents are based upon the total binder from a, b, and c in said composition, and the benzoxazine monomer comprises on average at least two benzoxazine rings per molecule.

Thus, as Ishida defines his invention as a ternary composition, Ishida expressly requires each of benzoxazine, epoxy and phenolic, and each of these three particular components in the specified amounts.

Here, the application is defined with regard to benzoxazine in liquid form at room temperature (perhaps with epoxy), but not with phenolic, let alone their combination or in the amounts specified.

And Claim 36 requires that the materials to be adhered have dissimilar coefficients of thermal expansion. Ishida makes no such reference to the materials to be adhered having dissimilar coefficients of thermal expansion.

Thus, Ishida cannot form the basis of an anticipation rejection.

Davis is directed to and claims an adhesive formed from a composition comprising, based on 100 weight percent of the resin portion of the composition: about 5 to about 50 weight percent of a poly(arylene ether) resin having a number average molecular weight of about 8,000 to about 13,000; about 50 to about 90 weight percent of a thermosetting resin selected from cyanate esters, polyesters, epoxy, benzoxazines, benzocyclobutene resins, and mixtures thereof; about 0.5 to about 15 weight percent of a toughening agent selected from the group consisting of poly(vinyl butyral-co-vinyl acetate) resins, partially hydrolyzed poly(vinyl butyral-co-vinyl acetate) resins, styrene-butadiene-styrene block copolymers, styrene-ethylene-styrene block copolymers, and styrene-ethylene-butylene-styrene block copolymers; and about 0.1 to about 7 weight percent of a cure agent.

Davis requires a poly(arylene ether) resin, and that resin must be present in an amount of about 5 to about 50 weight parts. Applicants, in their claims, require no such resin, but do require a benzoxazine in liquid form at room temperature.

And Claim 36 requires that the material to be adhered have dissimilar coefficients of thermal expansion. Davis makes no such reference to the materials to be adhered having dissimilar coefficients of thermal expansion.

Thus, Davis cannot form the basis of an anticipation rejection.

Therefore, as neither Ishida nor Davis disclose each and every recitation of the claims under review, the Section 102 rejections based thereon cannot stand and as such Applicants request reconsideration and withdrawal thereof.

Moreover, Applicants have amended the claims to recite "consisting essentially of" as the transitional phrase. Such an amendment precludes the possibility of the inclusion in the present claims of a phenolic from Ishida or a poly(arylene ether) from Davis.

Reconsideration and withdrawal of the Section 102 rejections are requested.

Section 103(a) Rejection

Claims 36-47 continue to stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Davis for the reasons given at page 3 of the Action.

Claims 36-48 continue to stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Davis as applied to Claims 36-47 and further in view of U.S. Patent Nos. 6,034,194 (Dershem) and 6,034,195 (Dershem) for the reasons given at page 3 of the Action.

Applicants traverse the Section 103(a) rejection.

Davis is discussed and contrasted above.

Dershem '194 is directed to and claims an adhesive composition consisting essentially of a liquid bismaleimide having a certain structure.

Dershem '195 is directed to and claims a die-attach paste comprising in the range of about 10 to 80 weight percent of a thermosetting resin composition, and in the range of about 20 to 90 weight percent of a conductive filler. The thermosetting resin composition comprises a) a liquid maleimide, b) in the range of about 0.01 to about 10 equivalents of a vinyl compound per equivalent of maleimide, c) in the range of 0.2 to 3 weight percent of at least one free radical initiator, based on the total weight of the composition, and d) in the range of 0.1 to 10 weight percent of at least one coupling agent based on the total weight of the composition. The coupling agent has both a co-polymerizable function and a silicate ester function.

While Davis refers generally to benzoxazines as a component for use in combination with the above-noted poly (arylene ether), each of Dershem '194 and '195 speak to liquid maleimide containing thermosetting resin compositions. The present invention is defined in terms of a composition having as one of its compounds the benzoxazine (not maleimide) in liquid form at room temperature.

In addition, there is no disclosure, teaching or suggestion in Davis to look to either Dershem '194 or Dershem '195 for a benzoxazine compound in liquid form at room temperature. And there is no disclosure in either Dershem '194 or Dershem '195 to look to Davis for a benzoxazine, irrespective of its physical state.

Only the present invention provides such a benzoxazine compound in liquid form at room temperature for use in a thermosetting resin composition together with thermoset compounds including epoxy, cyanate ester, maleimide, acrylate, methacrylate, vinyl ether, styrenic, vinyl ester, propargyl ether, diallylamide, aromatic acetylene, benzocyclobutene, thiolenes, maleate, oxazoline, and itaconate, optionally, one or more anti-oxidants, bleed control agents, fillers, diluents,

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coupling agents, adheson promoters, flexibilizers, dyes and pigments, and a cure initiator.

Frankly, there is no motivation for persons of ordinary skill in the art to look to the two cited Dershem documents, to supply the deficiencies of Davis, or vice versa, to reach the invention as now claimed.

To conclude otherwise, as the Examiner has, could only have come about from the use of impermissible hindsight. Hindsight as the Examiner knows can find no place in the examination of applications for Letters Patent.

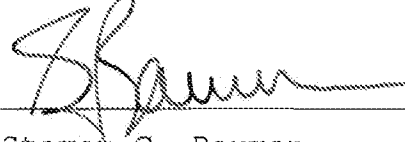
Based on the above, Applicants submit the application is in condition for allowance.

This paper in any event represents an earnest attempt at advancing prosecution on the merits, and thus respectfully submits that entry thereof is proper and at a minimum helps to focus the issues for appeal.

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Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'S. Bauman', is written over a horizontal line.

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